Please enter Examiner's Amendment in claims 4 and 14 as shown. Thanks. Ro 11/23/2004.

In the Claims

1. (original) A method of controlling a motor, comprising:

generating a square waveform command signal for controlling the operation of the motor based on a square waveform, wherein the square waveform comprises an acceleration phase immediately followed by a deceleration phase;

shaping the square waveform command signal using (1-cosine)/2 shaping to thereby generate a shaped waveform command signal;

generating a control signal based on the shaped waveform command signal; and

outputting the control signal to the motor.

2. (original) The method of claim 1, wherein generating the square waveform command signal includes:

determining a seek length;

determining an acceleration; and

generating the square waveform command signal based on the seek length and acceleration.

3. (original) The method of claim 2, wherein determining the acceleration includes:

determining an optimum slope for the square waveform;

determining an approximate acceleration based on the optimum slope;

determining a sample count based on the seek length and approximate acceleration; and

calculating the acceleration based on the seek length and sample count.

4. (currently amended) The method of claim 1, further comprising:

generating a plant adjustment signal;

summing the plant adjustment signal with the control signal to generate a resultant signal; and

outputting the resultant signal to the ~~voice coil~~ motor to thereby control the ~~voice coil~~ motor.

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Thanks.

calculating the acceleration based on the seek length and sample count.

14. (currently amended) The apparatus of claim 11, further comprising:

a plant adjustment device that generates a plant adjustment signal based on the shaped waveform command signal; and

a summation device that adds the plant adjustment signal to the control signal to generate a resultant signal, wherein the resultant signal is output to the ~~voice coil~~ motor to thereby control the ~~voice coil~~ motor.

15. (original) The apparatus of claim 11, further comprising:

a plant model that determines a reference position of a read/write head; and

a measurement device for measuring an actual position of the read/write head, wherein the controller determines a position error based on the reference position and the actual position, generates a correction signal based on one of the position error, and adds the correction signal to the shaped waveform command signal to thereby generate the control signal.

16. (original) The apparatus of claim 13, wherein the feedforward device determines the approximate acceleration using the following equation:

$$A = Minimum\_A + (slope * minimum(SeekLength, Maximum\ SeekLength)$$

where A is the approximate acceleration, Minimum_A is a minimum acceleration value for the seek operation, slope is the determined optimum slope, SeekLength is the determined seek length for the seek operation, and Maximum SeekLength is a maximum seek length for the seek operation.

17. (original) The apparatus of claim 13, wherein the feedforward device determines the sample count based on the following equation:

$$sample\_count = truncated(sqrt(SeekLength/A))$$